WHAT IS CLAIMED IS:

1. A lane recognition apparatus for a vehicle, comprising:

an image picking-up section picking up a road image ahead of the vehicle;

a lane-marker detecting section detecting a plurality of lane-marker candidate points on the road image;

a road model parameter calculating section calculating a road model parameter representative of a road shape ahead of the vehicle on the basis of the lane-marker candidate points;

a deviation calculating section calculating a deviation between the lane marker candidate point and an estimated candidate point estimated from the road model parameter; and

a lane marker detection feasibility determining section determining whether the road image is employed for detecting the lane marker, on the basis of the deviation.

2. The lane recognition apparatus as claimed in claim 1, wherein the lane-marker detecting section detects the lane-marker candidate points in the form of coordinate values on a plane coordinate system of the image plane, and the road parameter calculating section calculating the road parameter on the basis of the coordinate values of the lane-marker candidate points.

3. The lane recognition apparatus as claimed in claim 1, wherein the deviation calculating section calculates an absolute value of a difference between the lane marker candidate point and the estimated candidate point which have the same distance from the vehicle on the road image, and outputs an average of all absolute values of the

differences between the lane marker candidate points and the estimated candidate points as the deviation.

4. The lane recognition apparatus as claimed in claim 1, wherein the deviation calculating section calculates a square value of a difference between the lane marker candidate point and the estimated candidate point which have the same distance from the vehicle on the road image, and outputs an average of all square values of the differences between the lane marker candidate points and the estimated candidate points as the deviation.

5. The lane recognition apparatus as claimed in claim 1, further comprising a pre-processing section which processes the road image picked up by the image picking-up section, the pre-processing section executes a differentiation process of the road image, and the deviation calculating section weights a differentiation density of the lane marker candidate point to the deviation when the deviation between the lane marker candidate point and the estimated candidate point is calculated.

6. The lane recognition apparatus as claimed in claim 1, wherein the deviation calculating section weights the deviation according to a distance from the vehicle to the lane marker candidate point on the road when the deviation between the lane marker candidate point and the estimated candidate point is calculated.

7. The lane recognition apparatus as claimed in claim 1, wherein the road parameter calculating section initializes the road model parameter when it is determined that the road image is not employed for detecting the lane marker.

8. The lane recognition apparatus as claimed in claim 1, wherein the road parameter calculating section uses the previous value of the road model parameter without initializing the road model parameter when it is determined that the road image is not employed for detecting the lane marker.

9. The lane recognition apparatus as claimed in claim 1, wherein the road parameter calculating section calculates the road model parameter without employing information as to the lane marker candidate point when it is determined that the road image is not employed for detecting the lane marker.

10. A lane recognition apparatus for a vehicle, comprising:

image picking-up means for picking up a road image ahead of the vehicle;

lane-marker candidate-point detecting means for detecting a plurality of lane marker candidate points from the road image;

road model parameter calculating means for calculating a road model parameter representative of a road shape ahead of the vehicle on the basis of the lane marker candidate points;

deviation calculating means for calculating a deviation between the lane marker candidate point and an estimated candidate point estimated from the road model parameter; and

lane marker detection feasibility determining means for determining whether the road image is employed for detecting the lane marker, on the basis of the deviation.

11. A method for recognizing a lane ahead of a vehicle, comprising:

picking up a road image ahead of the vehicle;

detecting coordinate values of a plurality of lane marker candidate points from the road image;

calculating a road model parameter representative of a road shape ahead of the vehicle on the basis of the coordinate values of the lane marker candidate points;

calculating a deviation between the lane marker candidate point and an estimated candidate point estimated from the road model parameter; and

determining whether the road image is employed for detecting the lane marker, on the basis of the detecting deviation.

12. A lane recognition apparatus for a vehicle, comprising:

a camera installed to the vehicle, the camera picking up a road image ahead of the vehicle; and

a processor coupled to the camera, the processor being arranged

to detect a plurality of lane marker candidate points from the road image;

to calculate a road model parameter representative of a road shape ahead of the vehicle on the basis of the lane marker candidate points;

to calculate a deviation between the lane marker candidate point and an estimated candidate point estimated from the road model parameter; and

to determine whether the road image is employed for detecting the lane marker, on the basis of the deviation.